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(12) **United States Patent**  
**Rigler et al.**

(10) **Patent No.:** **US 6,582,903 B1**  
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(54) **METHOD AND A DEVICE FOR THE  
 EVALUATION OF BIOPOLYMER FITNESS**

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(\*) **Notice:** Subject to any disclaimer, the term of this  
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(52) **U.S. Cl.** ..... **435/6; 356/36; 356/302;  
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#### (56) References Cited

##### U.S. PATENT DOCUMENTS

3,872,312 A \* 3/1975 Hirschfeld ..... 250/458

4,405,237 A 9/1983 Manuccia et al.  
 5,223,408 A 6/1993 Goeddel et al.  
 5,252,743 A \* 10/1993 Barrett et al. .... 548/303  
 5,381,224 A \* 1/1995 Dixon et al. .... 356/72  
 5,608,519 A \* 3/1997 Gourley et al. .... 356/318  
 5,720,928 A \* 2/1998 Schwartz ..... 422/186  
 5,760,951 A \* 6/1998 Dixon et al. .... 359/385

#### FOREIGN PATENT DOCUMENTS

EP 0 245 206 4/1987  
 EP 0 319 815 11/1988  
 EP 0 501 688 2/1992  
 WO WO/9201513 2/1992

#### OTHER PUBLICATIONS

Eigen et al. Sorting single molecules: application to diag-  
 nostics and evolutionary biology. PNAS-USA.  
 91:5740-5747, Jun. 1994.\*

Meyer et al. Particle counting by fluorescence correlation  
 spectroscopy. Biophys. J. 54:983-993, Dec. 1988.\*

Thompson et al. Immunoglobulin surface-binding kinetics  
 studied by total internal reflection with fluorescence cor-  
 relation spectroscopy. Biophys. J. 43:103-114, Jul. 1983.\*

Kask et al. Fluorescence correlation spectroscopy in the  
 nanosecond range: photon antibunching in dye fluorescence.  
 Eur. Biophys. J. 12:163-166, Feb. 26, 1985.\*

(List continued on next page.)

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#### (57) ABSTRACT

A method for identifying one or a small number of  
 molecules, especially in a dilution of  $\leq 1 \mu\text{M}$ , using laser  
 excited FCS with measuring times  $\leq 500$  ms and short  
 diffusion paths of the molecules to be analyzed, wherein the  
 measurement is performed in small volume units of prefer-  
 ably  $\leq 10^{-14}$  l, by determining material-specific parameters  
 which are determined by luminescence measurements of  
 molecules to be examined.

115 Claims, 32 Drawing Sheets

FIG. 1 - Schematic diagram of the device of FIG. 1

